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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,911	01/18/2007	Kenji Shizuka	296009US0PCT	4718

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EXAMINER	
HAN, KWANG S	
ART UNIT	PAPER NUMBER
1727	

NOTIFICATION DATE	DELIVERY MODE
07/21/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/591,911	SHIZUKA ET AL.	
	Examiner	Art Unit	
	Kwang Han	1727	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 May 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

LAYERED LITHIUM NICKEL MANGANESE COBALT COMPOSITE OXIDE POWDER FOR MATERIAL OF POSITIVE ELECTRODE OF LITHIUM SECONDARY BATTERY, PROCESS FOR PRODUCING THE SAME, POSITIVE ELECTRODE OF LITHIUM SECONDARY BATTERY THEREFROM, AND LITHIUM SECONDARY BATTERY

Examiner: K. Han SN: 10/591,911 Art Unit: 1727 July 18, 2011

Detailed Action

1. The Applicant's amendment filed on May 15, 2011 was received. Claim 1 was amended.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

3. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is maintained.

Regarding claims 1, 2, 10-12 and 17-19, it is unclear and indefinite as to whether or not carbon is present in the powder of the electrode material since the value of C/S being 0.025 or smaller may include having no carbon present which meet the limitations of the claim when C=0 and a weight percent "lower" includes having none. All claims dependent on claims 1 and 2 are also rejected for the same. For the purposes of compact prosecution it will be assumed carbon is not present in the powder.

Claim Rejections - 35 USC § 103

4. Claims 1-4 and 6-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoya et al. (US 2004/0076882) in view of Hampden-Smith et al. (US 2003/0054218) is maintained.

Regarding claims 1, 2, 4, 6, and 10-19, Hosoya discloses a powder of a layered lithium-nickel-manganese-cobalt composite oxide for use as a cathode material in a lithium secondary battery [0038] characterized by having a formula defined by $Li_sNi_{1-t-u}Mn_tM'_uO_2$ where M' is any one or more transition metals (e.g. Co) [0048] and s, t, and u satisfy $0.90 \leq s < 1.1$, $0.05 \leq t \leq 0.50$, and $0.01 \leq u \leq 0.30$, respectively [0046-0048] but is silent towards the volume resistivity and BET specific surface area. Regarding the limitations toward the volume resistivity in a state of being compacted at a pressure of 40MPa, it has been held by the courts that if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F2d. 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01.

Hampden-Smith teaches a secondary battery where the electrode is formed from a lithium based fine powder [0122] where the BET surface area of the powder should be as high as possible to increase catalytic activity [0150] teaching the BET surface area of the powder to be a result effective variable. It would have been obvious to one of ordinary skill in the art at the time of the invention to vary the carbon weight percentage and the BET specific surface area since it has been held that discovering the optimum ranges for a result effective variable such as weight percentage and BET specific

surface area involves only routine skill in the art in the absence of showing of criticality in the claimed range (MPEP 2144.05) In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 3, Hosoya discloses a value of y/x which is between 0.95 and 2.5 (e.g. when t=0.4 and u=0.2).

Regarding claim 7, it is noted that this claim is a product-by-process claim. "Even though product-by-process are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). The powder structure of Hosoya is similar to that of the Applicant's, Applicant's process for producing the powder is not given patentable weight in the claims.

Regarding claims 8 and 9, Hosoya discloses a positive electrode for a lithium secondary battery comprising a current collector having thereon a positive electrode active material layer, a non-aqueous electrolyte containing a lithium salt and a positive electrode capable of intercalating/deintercalating lithium [0014, 0020, 0064].

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hosoya et al. and Hampden-Smith et al. as applied to claim 1 or 2 above, and further in view of Shizuka (US 2005/0158546) is maintained.

The teachings of Hosoya and Hampden-Smith as discussed above are herein incorporated.

Regarding claim 5, Hosoya discloses mean particle size of the composite oxide to be 2 microns or more [0051] but is silent towards the bulk density and median diameter of the composite oxide particles.

Shizuka teaches a layered lithium nickel based compound oxide has properties including a median diameter from 9-20 microns and a bulk density of at least 2.0g/cc because it is capable of providing a lithium secondary cell having a high capacity and excellent rate characteristics [Abstract]. It would have been obvious to one of ordinary skill in the art at the time of the invention for the composite oxide of Hosoya and Hampden-Smith to have properties including a median diameter from 9-20 microns and a bulk density of at least 2.0g/cc because it is capable of providing a lithium secondary cell having a high capacity and excellent rate characteristics.

Response to Arguments

6. Applicant's arguments filed May 15, 2011 have been fully considered but they are not persuasive.

Applicant's principal arguments are:

(a) the amended claim 1 further limiting the value of z, which is an excess quantity of lithium defines the lower limit of the C/S value which means that the C/S is not zero, and

(b) Hosoya discloses merely mixing the raw materials and does not define the volume resistivity, carbon content, the specific surface area and the ratio C/S thereof where the Li excess amount of Hosoya is up to 0.02.

In response to Applicant's arguments, please consider the following comments:

(a) the limitations of the claim define "having a value of C/S, wherein C is the concentration of carbon contained therein (% by weight) and S is the BET specific surface area thereof". Applicants arguments towards further limiting the range value of z does not sufficiently address the Examiners arguments stating the lack of the presence of carbon within the electrode material meets the limitation of having a value of C/S being 0.025 or smaller,

(b) Hosoya recognizes further sintering [0055] the mixtures and the value of the Li to be in a range from 0.9 to 1.1 which is inclusive of the range the Applicant has amended the Li content to be. The specific surface area and the value of C/S have been argued above as being obvious in view of the teachings of Hampden-Smith for the specific surface area and the limitations of the claim not requiring the presence of carbon. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Furthermore, as discussed in the rejection presented above, while the prior art does not explicitly teach the volume resistivity, these properties are considered inherent in the prior art barring any differences shown by objective evidence between (the object) powder composite oxide electrode material disclosed in the prior art and the applicant. As (the object) the powder composite oxide electrode material taught by the prior art

and the applicant are identical within the scope of claims 1 and 2, Hosoya inherently teaches that the volume resistivity is 5×10^5 Ω.cm or lower in the state of being compacted at a pressure of 40 MPa.

Contact/Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kwang Han whose telephone number is (571) 270-5264. The examiner can normally be reached on Monday through Friday 8:00am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Barbara Gilliam can be reached on (571) 272-1330. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. H./
Examiner, Art Unit 1727

/Barbara L. Gilliam/
Supervisory Patent Examiner, Art Unit 1727